

U.S.S.N. 09/976,082

Claim 15 has been cancelled and withdrawn from further consideration by the Examiner.

Claims 1, 3-6 and 7-14 stand rejected.

Objection To The Drawings

Figures 1 and 2 are objected to by the Examiner for containing reference signs not mentioned in the description.

Figures 1 and 2 have been amended to alleviate the Examiner's objections. A redlined copy is hereby submitted for the Examiner's approval.

Objection To The Specification

The specification has been objected to for the trademark of "Endura" not being capitalized.

Page 2 of the specification has been amended to capitalize the trademark "ENDURA" to alleviate the Examiner's objections.

U.S.S.N. 09/976,082

Claim Rejections Under 35 USC §112

Claims 3 and 15 are rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 15 has been cancelled and withdrawn from further consideration by the Examiner.

Claim 3 has been amended to change its dependency from claim 2 to claim 1. A reconsideration for allowance of claim 3 is respectfully requested of the Examiner.

Claim Rejections Under 35 USC §103

Claims 1, 4, 5 and 7-15 are rejected under 35 USC §103 (a) as being unpatentable over Banholzer et al '198 in view of Lamont, Jr. '556. It is contended that Banholzer et al disclose a method for placing a substrate on the pedestal which has a wafer support ring and wafer lifters including a lifter body of annular shape that has a center cavity with a diameter larger than the diameter of the wafer pedestal; four support fingers; and platform defined by slanted surfaces from a vertical plane. It is further contended

U.S.S.N. 09/976,082

that while Banholzer et al does not disclose the material of the lift member or the material sputter deposited, such are disclosed by Lamont, Jr. in a method for preventing contamination of a wafer during sputtering, that all components within the sputter chamber should be coated with the material to be deposited.

Claim 15 has been cancelled and withdrawn from further consideration by the Examiner.

The rejection of claims 1, 4, 5 and 7-14 under 35 USC §103(a) based on Banholzer et al and Lamont, Jr. is respectfully traversed.

The Applicant respectfully submits that Banholzer et al and Lamont, Jr., either singularly or in combination thereof, does not teach a lift body that is fabricated of a material which has a rigidity of at least that of aluminum, or the step of fabricating a lift body for a wafer lifter with aluminum or stainless steel. Regarding the Examiner's contention that "Lamont, Jr. discloses ... all components within the sputter chamber should be coated with the material to be deposited" and further "to modify the invention of

U.S.S.N. 09/976,082

Banholzer to use aluminum as the material for the lift body because of the desire to prevent contamination when sputtering aluminum", the Applicant respectfully submits that such are not the present invention, i.e. the present invention does not aim at preventing contamination. Instead, the present invention teaches that the lift body must be fabricated of a material of sufficient rigidity, i.e. at least that of aluminum, or fabricated of aluminum or stainless steel, such that the lift body can sustain the high process temperature of the sputter chamber. Such criticality is clearly presented in the specification on page 14, lines 7-11:

"The design is such that when the wafer lifter is used in a fabrication process, the high temperature of the sputter chamber expands the wafer lifter and thus a small gap, such as 0.5 mm, between the wafer and the slanted shoulder portion is provided."

In the Response to Argument section of the 04/07/2003 Office Action, the Examiner argued that:

U.S.S.N. 09/976,082

"Applicant has argued that Lamont, Jr. aims at preventing contamination whereas Applicant has a different purpose. That appears to be the only argument. Applicant's has not claimed a different purpose. there is motivation to combine the references. In essence, Applicant has argued that because there is a different reason for combining the references than Applicant's invention, the invention is not obvious. On that argument, the Examiner must disagree."

The Applicant respectfully submits that the Applicant has not argued that because there is a different reason for combining the references than Applicant's invention, the invention is not obvious. Instead, the arguments of the Applicant is such that even when the Banholzer et al and Lamont, Jr. references are combined, the requirement of fabricating a lift body of a material that has a rigidity of at least that of aluminum is neither taught or disclosed by the references.

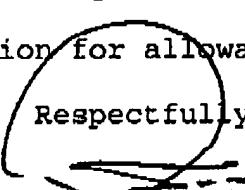
U.S.S.N. 09/976,082

The rejection of claims 1, 4, 5 and 7-14 under 35 USC §103(a) based on Banholzer et al and Lamont, Jr. is respectfully traversed. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

Based on the foregoing, the Applicant respectfully submits that all of the pending claims, i.e. claims 1, 3-5 and 7-14, are now in condition for allowance. Such favorable action by the Examiner at an early date is respectfully solicited.

Attached hereto is a marked-up version of the changes made to the specification, claims and abstract by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made". In the event that the present invention is not in a condition for allowance for any other reasons, the Examiner is respectfully invited to call the Applicant's representative at his Bloomfield Hills, Michigan office at (248) 540-4040 such that necessary action may be taken to place the application in a condition for allowance.

Respectfully submitted,


Randy W. Tung
Reg. No. 31,311
Telephone: (248) 540-4040

U.S.S.N. 09/976,082

VERSION WITH MARKINGS TO SHOW CHANGES MADEIn The Drawings

Figures 1 and 2 have been amended and a redline copy of the drawing changes are hereby submitted for the Examiner's approval.

In The Specification

Paragraph 004 has been amended as follows:

004 In a typical sputter chamber, the major components utilized include a stainless steel chamber that is vacuum-tight and is equipped with a helium leak detector, a pump that has the capacity to reduce the chamber pressure to at least 10^{-6} torr or below, various pressure gauges, a sputter source or target, a RF or DC power supply, a wafer holder, a chamber shield and a clamp ring. The sputter source is normally mounted on the roof of the chamber such that it faces a wafer holder positioned in the center of the chamber facing each other. The sputter source utilized can be a W or TiW disc for a process in which W or TiW is sputtered. A

U.S.S.N. 09/976,082

typical sputter chamber is that supplied by the Applied Materials, Inc. of Santa Clara, CA. under the trade name of [Endura] ENDURA[®] 5500. In some of the sputter chambers, the wafer holder is structured as a pedestal which includes an internal resistive heater.

In the Claims

Claim 15 has been cancelled without prejudice.

Claim 3 has been amended as follows:

3. (Amended) A wafer lifter for self-centering a wafer on a pedestal according to claim [2] 1, wherein a base of said slanted shoulder portion of the support finger defines a diameter of a circular area surrounded by the platforms of the at least four support fingers which is not larger than a diameter of said wafer when measured at 23°C.